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ABSTRACT

This study describes the development of a technique to help the pre-school teacher create an environment in which a large group of children can learn and to be an effective mediator between the environment and the interests and abilities of each child. Teachers were trained to rate children in terms of observational categories, to help them interpret the needs and potentialities of the disadvantaged child. A videotaped training curriculum which reflected those clusters of behavior which are highly predictive of intelligence and school readiness was prepared, using a group of 4-year-old day care students as subjects. Each child was observed and taped for five periods of 20 minutes, and also tested for IQ. A package of six half-hour tapes was completed in the spring of 1970 and tested on participants in a training program for day care teacher assistants and on a group of 15 student teachers. A further program involved second year students in early childhood education at New York Community College. Results indicated that the technique employed and the substance and quality of the tapes had value beyond their initial intent or scope and that the tapes are adaptable to a wide range of educational approaches. It is hoped to test the tapes on a wider scale and develop them for broader implementation. The manual used in the program is included in the document. (MBM)

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PERCEPTUAL SHIFT TRAINING FOR TEACHERS OF DISADVANTAGED CHILDREN

This project is supported in part by the Office of Economic Opportunity Grant No.CG9924-A1.

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PERCEPTUAL SHIFT TRAINING FOR TEACHERS OF DISADVANTAGED CHILDREN

I. INTRODUCTION

Children growing up in extreme slum conditions, often with no consistent care, and with little routine or order in the home, often have a disregard for, or unawareness of, structures inherent in group behavior and play. They may lack curiosity or interest in the environment, may not know how to use available material, and may be vague about their own identity, as well.[1] If a child is exposed to inconsistent nurturing in a disorganized environment, he will suffer from an inability to organize explanatory statements about life. If alternatives are not offered to a child, he does not develop an ability to see alternative ways of carrying out instructions; his world is haphazard and constricted, and his thinking ability to move in the world reflect this.[2]

We Know, however, that among the "disadvantaged",difference in cognitive and personality characteristics are evident. That is, while there may be certain general patterns of behavior associated with impoverishment, there are also differences among individuals in terms of competence, skills and ability. For a teacher to be effective she must know where a child is in terms of both these general and specific characteristics.

Thus, it is essential for teachers to address themselves to each child at the child's particular level of ability and comprehension. A prerequisite to this however, is a teacher's ability to accurately assess the level of the child, particularly in the critical area of intelligence. Previous research has shown that teachers do evaluate children in terms of intelligence but often respond to factors that are not relevant to the areas being assessed. For example, many teachers of poor children perceive passive conformity to class room routine to be highly associated with "good behavior" and with good school functioning and, implicitly, with intelligence. However, all too often passive responsive behavior in school is merely a mask for a lack of comprehension, reflecting a lack of inner movement. The danger of such inaccurate evaluation of behavior is that a child's weaknesses will remain unidentified and his strengths allowed to lie fallow. A teacher must learn to look for and assess the appropriate cues in order to identify and develop her pupils' intellectual and social potential.

The teacher has a difficult dual role: she must create an environment in which a large group of children can learn, and she must be an effective mediator between the environment and the interests and abilities of each child. The study reported on here, focuses upon the development of a technique which will help the pre-school teacher in her difficult task.

II. BACKGROUND

A study conducted by the Center for Community Research (Holmes, 1968) showed that there are consistent differences in interaction patterns, both verbal and non-verbal, between disadvantaged children and non-disadvantaged children. The same study showed that when teachers were asked to evaluate the disadvantaged children along dimensions of intelligence and school readiness, the evaluations were highly inaccurate (in some cases highly significant negative correlations between actual and predicted IQ obtained).

An objective observation schedule derived from the Bales Interaction Analysis Scale (ref. 1950) and developed by the Center in 1964 (Holmes,1965) was used in the study cited above. The schedule consists of two parts, A and B. Part A requires that an observer rate individually every action in which a child engages, over a 20-minute period. Part B requires that the observer make one summary rating of behaviors over the entire twenty minute period using a modified Likert seven point scale along a variety of dimensions. For part A of the schedule, scores consist of the relative number of instances in which each child is observed as engaging in each type of activity. The scores given each child for part B consist of a scale value for each of the items.

The data resulting from observations made in several Head Start centers and in several middle class nursery schools were subjected to a number of factor analyses. The final rotated factors for each part of the schedule were interpreted in terms of several specific modes of class room behavior. The factors derived from each observational schedule are as follows: (a complete description of the technique is to be found in Holmes, 1968).

Part A.
- Autonomous initiating behavior
- Passive responding behavior
- Social destructiveness
- Social constructiveness
- Non-purposive behavior

Part B

Task oriented behavior
Verbal behavior and reactivity
Socialization
Effective involvement

Disadvantaged and middle class children did manifest different patterns of behavior in terms of their factor scores. Moreover, the evaluation found between factor scores and intelligence (and school readiness) varied considerably between the two populations. A multiple correlational analysis was applied to observational factor scores arising from both of the observational schedules, one analysis for disadvantaged, one for middle class, to see if it was possible to predict intelligence from behavior for each group. The multiple r for parts A and B of the observation schedule for Head Start and for middle class samples are shown in table I below:

Table I. Multiple correlation for Parts A and B of Observation Schedule for Head Start and middle class samples:

	PART A			PART B		
	r 1. 23456*	N	P	1.2345**	N	P
Head Start	.5994	36	.01	.05611	36	.01
Middle Class	.3107	40	.05	.0769	40	NS

* I = IQ; 2 3 4 5 6 = the 5 factors of Part A
** I = IQ; 2 3 4 5 = the 4 factors of Part B

As can be seen from table I the multiple r between IQ and the factor scores of the observation schedule was significant in all instance expect for the middle class group on Part B. It can also be seen that the relationship is much stronger for the Head Start sample.

On the basis of these analyses it was demonstrated that both intelligence (as measured by the Stanford Binet Intelligence Scale) and school readiness (as measured by the Caldwell Pre-School Inventory) could be predicted using the appropriate combination of weights for each factor represented in the observational scale. These weights are shown below for both intelligence and school readiness.

I. Intelligence:

Part A of the observational schedule

Autonomous initiating behavior	+	3.873
Passive responding behavior	+	1.013
Social destructive behavior	+	.737
Social constructive behavior	+	15.889
Non-purposive behavior	-	3.769

Part B of the observational schedule

Task-oriented behavior	+	.529
Verbal and reactive behavior	+	.441
Socialization	+	.019
Affective behavior	+	.615

II. School Readiness:

Part A

Autonomous initiating behavior	+	3.208
Passive responding behavior	+	.222
Socially destructive behavior	+	1.437
Socially constructive behavior	+	2.804
Non-purposive behavior	-	6.308

Part B

Task-oriented behavior	+	.348
Verbal and reactive behavior	+	.226
Socialization	+	.076
Affective behavior	+	.403

For the Head Start sample it appeared that a knowledge of the children's behavior patterns was predictive of IQ, using the calculated regression equation. However, a replication study was needed, in order to see whether the multiple r found in the previous study would hold for any urban Head Start group.

The implications held by this study for teacher training seemed to be very great: if it were possible to predict intelligence and school readiness on the basis of appropriate application of observational techniques, teachers could be trained to make more realistic assessments of their children and thereby

to reach their educational goals more adequately.

In summary, the results of the previous study demonstrated that: 1) teachers' ratings of IQ and school readiness are often inaccurate, and sometimes negatively related to objective measure of IQ and school readiness; 2) the interpretation of behavioral characteristics used by teachers of disadvantaged children to evaluate the children are often invalid; 3) it is possible to predict intelligence and school readiness on the basis of observational data, and therefore it should be possible to train teachers to evaluate more accurately children's behavior in estimating IQ.

III. Specific Objectives

Since it was possible in the Center's earlier research to develop objective measures of children's behavior which when weighted appropriately could be used to predict both intelligence and school readiness with a high degree of accuracy, it was felt that if teachers could be trained to rate children in terms of the observational categories used in the study they could more accurately assess the children in their classes and hopefully better interpret the needs and potentials of the disadvantaged child. While we were cognizant of the fact that there are both over-all patterns of behavior associated with impoverishment as well as differences among children, we felt that both these aspects of behavior were related. That is, if teachers could learn to see the over-all similarities in children behavior, and to recognize and identify the relative importance of differences in various general aspects of behavior, they could then more sensitively deal with differences among their children in personality and competence. What was most important was for teachers to acquire a valid framework from which to assess and interpret behavior, rather than to rely upon a vague haphazard or arbitrary approach.

To accomplish these ends, we set out to prepare and test a videotaped training curriculum based upon the results of the 1968 study. The tapes were to reflect those "factors" or clusters of behavior which were highly predictive of intelligence and school readiness. In addition, it was proposed that the original study be replicated. In implementing the study there were however, two departures from the initial proposal as follows:

I. Limiting the replication to consideration of intelligence only thus eliminating the factor school readiness.

The reasons for this were twofold: a) the nature of the training and b) the inadequacy of the school readiness measure. Since our emphasis was to be on shifting the perception of teachers regarding certain behaviors of children as they

relate to current intelligence levels, it appeared best not to complicate the process by introducing the additional dimension of school readiness. Teachers would have to learn to attach different importance to a number of composite elements of behavior involving two processes 1) organizing a group of behavioral elements into composite categories, and 2) assigning differential importance to each in terms of a criterion. Since the relative importance of behaviors was different for intelligence and for school readiness and since time for training was limited, it was thought best not to possibly confound results through including a criterion in addition to that of intelligence.

Of equal importance and highly related to the first consideration was the fact that the proposed measure of school readiness (Caldwell, 1965) was not necessarily a measure of school readiness, as Caldwell herself had noted. In the previous research it had been interesting to see that the Binet and the Caldwell were related to different clusters of behavior; however, the identity of the second "Caldwell-related" cluster did not definitely establish the nature of the Caldwell itself. Thus, use of an instrument that has not been standardized would unnecessary confusion without necessarily being relevant to our over-all intention, that is, to increase and enhance a teacher's ability to recognize and promote intellectual development of her students.

II. Confining teacher training to those factors derived from Schedule A and eliminating those derived from Schedule B.

Only some of the scales and factors were amenable to the requirements of the current study. For example, those factors derived from Schedule A are illustrative of particular behavior patterns that can readily be labeled or identified with a high degree of consensus, i.e., the presence or absence of these patterns are readily visible. The factors that are derived from Schedule B, however, require considerable subjective interpretation on the part of the observer. For example, when we are identifying "autonomous" behavior (Schedule A) we want to see three simple items 1) whether the child initiates an action by himself , 2) whether there is a definite goal in mind which is visible, 3) whether he terminates it by himself. When we are identifying " task oriented" behavior (Schedule B), however, we are making an assessment about the degree of involvement in an activity, the duration of attention span, and the quality of commitment to the task. We felt that those teachers or observers who were sufficiently well acquainted with children's

behavior to make the subtle and fine discriminations required would actually not be in need of the type of training we were offering. Secondly, these qualities were much more difficult to illustrate visually than were the aspects of behavior we were illustrating from observation Schedule A. Nevertheless, we did attempt to prepare videotapes illustrative of some of the "factor" derived from Schedule B, and did show them to teachers for comments and discussion. These sequences or aspects of behavior were not used in the training sessions, neither were they included in our final curriculum package. (A further discussion of this will be included in a later section).

IV METHOD OF PROCEDURE:

A. Replication
I. Sample

A group of four-year-old day care students participating in Day Care Center programs were observed using observational Schedules A and B, as described above. The sample differed slightly from that used in the previous study (1968) in that previously the participants were from a Head Start Center within the same "neighborhood". The mean IQ scores and standard deviations for both groups are presented below:

Table II MEAN IQ SCORES OF DAY CARE and HEAD START CHILDREN

Center	Mean IQ	Standard Deviation
Head Start 1968	94	11.93
Day Care 1970	94	24.44

As can be seen from table II the mean IQ scores of both groups were identical. However, the great difference in S.D's although not statistically significant, seems to highlight other possible differences between the groups. For example, it is acknowledged that Day Care students are better off than Head Start students in several respects. For example, mothers in day care families are employed while among Head Start families mothers tend to be unemployed many are on welfare. Furthermore, a study conducted by the Center (Holmes, 1966) of differences among different groups of preschool aged children and their parents, tends to confirm that significant differences in values and life style exist among a group loosely designated as the "poor". In this earlier study the groups investigated, were comprised of children whose parents on their own initiative sought Head Start participation,

children who participated in the Head Start program but whose participation was a result of active reaching out by staff, and children who were contacted by staff during the recruitment procedure but whose mothers did not enroll them in the program subsequent to this contact. Results showed that differences among all these groups were highly significant in every measure used, including parents' aspiration and expectations for their children, living space of the child, activities of the children, awareness of and attitudes toward community facilities, and children's scores on the Caldwell Preschool Inventory; the self-selected poor group did better than the other two disadvantaged groups on every measure. Hence, there is reason to suspect that the population of children used in the current study, although similar in IQ and living in the same neighborhood as the 1968 group, would be different in many other subtle respects. Actually this difference may have partly contributed to differences in the results of the replication, however, this will be discussed in a later section.

The reason for selecting the Day Care Center rather than the Head Start Center was that at this point (1970) the Head Start Center had acquired a large Spanish-speaking population. This made testing of children much more difficult and cumbersome, if not impossible in many instances. In addition the previous research had not included Spanish speaking children. We therefore selected another Center close by within the same geographic area.

2. Measuring instruments and techniques:

As in the previous study, each child was observed for five 20 minutes intervals. Each school day was divided into roughly 15 periods and the observation periods for each child were assigned randomly. In addition, four observers were also randomly assigned to various children and periods of observation so as to ensure against "observer" and "occasion"bias. Each child's IQ was measured by a staff member not performing observations using the Stanford-Binet Intelligence Scale. The observational ratings of the children participating in the program were scored using the regression weights developed in the previous study as a means to predicting IQ score. The results of the replication will be discussed in another section.

B. Videotapes

1. Sample:

Using several preschool programs, the Center prepared video-

tapes representative of children's behavior typically occuring in a normal classroom. The tapes were prepared in the East Tremont Head Start Center, the East Tremont Day Care Center, the East Flatbush Rugby "Y" Center of the Associated Ys, and at the Dalton School, a private school in New York City.

2. Techniques:

In every instance, except at the Dalton School, children were also tested for IQ. The taping was not based upon the results of these tests, however, the scores acted as an informal validation of previous findings. That is, our guide to taping was behavior, not results, of the test. We wanted to show actual, spontaneous ongoing behavior as it routinely appears to an observer or teacher in a normal classroom setting, thereby providing a picture of what is most typically seen in such a milieu. We wanted to capture the authentic flavor of a classroom environment while focusing on the specific types of actions children exhibit within it. The current project grew out of observations made on the relationships between IQ and behavior within classroom settings; the planned curriculum package was to provide cues to teachers on how to recognize, identify and enhance growth within classroom environments. Hence, various settings were used for the tapings in order to lend variety and representativeness to the results. While the basic salient dimensions of behavior occur irrespective of setting, the variety of tone, atmosphere and equipment of nursery classrooms made it desirable to include several settings for instructional purposes.

The videotape equipment was brought into each classroom and set up in a corner of the room. We then demonstrated its use to the children. For the first few sessions much attention was devoted to the equipment. But after a while, it achieved the status of furniture in the classroom. This does not mean that it was ignored, but merely incorporated as part of the setting and routine. Every single child was given at least one opportunity to be taped. Sufficient wire footage was provided to allow for free movement around the entire perimeter of the classroom. By using a zoom lens we were able to get close-ups of children in any part of the room while remaining stationary ourselves. To assure that the vocalizations of the child who was currently being filmed would not be lost in the general din of the classroom, we decided to employ a small microphone to be worn necklace fashion. The microphone was at first an object of facination at the children and remained so for a longer period of time than did the other equipment, serving as an engaging prop.

However, once the children explored its properties to the limits of their interests and our patience, (and hearing!) we were able to tape with little self-consciousness or special antics on their part.

At the end of each day, the children gathered round to view the results of our day's efforts. The taping extended over a six month period; on the days we were not taping, hours were spent reviewing tapes and selecting for final editing those sequences which illustrated best those aspects of behavior for which we were looking: those associated with either the presence or absence of cognition. Once again the children we observed spanned a range of emotional and characterological differences; while competent teaching would necessitate an awareness or sensitivity to these differences, the primary focus of our training was to be on the implications of typical nursery classroom behavior,and the focus was to be educational, not therapeutic. Hence, the guiding principle in the selection and editing of sequences was clarity, representativeness and relevance. A sequence of behavior was relevant if it contained all the dimensions of behavior defined by a particular factor salient to the prediction of IQ. Naturally, all forms of behaviors lend themselves to varieties of interpretations and hours were spent in coding tapes, screening, observation, and assessment of sequences for inclusion in a training tape.

V. PILOT STUDY:

A. Sample

In the spring of 1970 an initial package of tapes was completed, consisting of six tapes, each about half an hour long composed of short two to three minute sequences illustrative of a single factor of behavior. The tapes were labelled as follows autonomous*, goal-less, social, verbal, expressive, affective, and task-oriented. At the time, the Lehman College of the City University of New York was operating a special training program for Day Care teacher assistants. These were assistants in Day Care programs who ,for various reasons, did not have the necessary requirements to be licensed as full Day Care teachers. There were approximately 20 participants in this program, many of whom had had years of teaching experience in other parts of the country or other parts of the world, while others had had many years of experience as teaching assistants in local Day Care programs; a few of the participants were novices in the area. The Day Care trainees volunteered to

* later changed to"goal-directed"

participate in our pilot training session.

B. Procedure:

The pilot training consisted of several viewings of the tapes, discussion of the contents, assessment of their value as a teaching device, and recommendations for improvement. We met with the trainees for two, two-and-a-half hour sessions. Each tape was played twice, the first time the participants were told that the tapes illustrated a particular type of behavior that they typically see in the classroom and each was asked to identify the behavior. After the second viewing a discussion was held on the nature, quality, value, and representativeness of each tape. At the end of the second session each participant was asked to fill out a very short questionnaire,relating to their feelings about the potential usefulness of the technique.

C. Results:

Interestingly, in every instance, with the exception of one, the teachers could identify what the single dimension of behavior was that was illustrated on each tape. Their difficulty in identifying "task-oriented" behavior led us to re-edit the tape. When we showed this to the teachers during the second week's session they agreed that the changes rendered the tape more meaningful. With regard to the other tapes we were very pleased to learn that at least our initial fear was quelled, i.e. ,we were illustrating what we thought we were illustrating, and by consensus we could agree that autonomous behavior, goal-less behavior, social behavior, affective behavior and verbal expressive behavior were appropriate descriptive categories.

Of the eleven respondents who completed the questionnaire, ten felt that the tapes, with the exception of "task-oriented", illustrated the behavior in question very well and that they had learned something from viewing and discussing these tapes; nine of them felt that they'd be interested in seeing more if they were available; and the majority felt that the visual aspects of the tapes would be more instructive if there were a great deal of accompanying commentary or explanation.

The results of the pilot study were both encouraging and instructive. We did learn that a great deal of discussion after viewing of the tapes was very important for elaboration and reinforcement of certain ideas. For example, we noted that while a teacher could recognize and identify autonomous behavior very easily and see several of its dimensions, such as acting alone, completion of an act, etc.,not all could see the relative salience of various components of the dimension of autonomy i.e., that the most important characteristic is its goal-directive aspect. Once an observer could assess the relative importance of various components of a category of behavior such as autonomy (not to speak of being able to identify various components) it became easier to distinguish between, for example, true autonomy and pseudo-autonomy (premature independence). The latter distinction is particularly significant since so many disadvantaged children exhibit what can be labelled as "pseudo-autonomy ": an inability to use the teacher as a resource. A teacher's inability to distinguish between the two can have serious consequences for a child.

Further, we realized how group process techniques could be used to facilitate learning. Teachers were encouraged to exchange experiences they had had in the class-room and to relate them to the points being discussed. Thus, differences in point of view could be argued, the more stimulated teachers could be encouraged to go back to their class-rooms, to observe and to validate a point, or in some instances to go home and look up a theoretical concept. By use of the videotapes we attempted to insure that understanding of such concepts could be meshed with visual and actual experiences.

Many of the teachers were quite concerned about the whole issue of language and its relationship to intelligence. We discussed, within the limits of the two sessions, some of the difficulties of positing a definite relationship between the two,and some of the current ways of looking at this issue. We discussed several kinds of language forms and functions e.g., active, egocentric and varieties of thinking, e.g., non-perceptual or symbolic and concrete. What also became apparent was the initial fearfulness of most of these teachers in discussing some of these issues, stemming perhaps from the abstract nature of some of the discussions as well as from the fear of exposing their own inadequacies. The group discussion technique provided an opportunity for some to raise questions and permitted each teacher to honestly explore some of these ideas in a realistic and productive fashion.

Once the teachers could identify and understand the aims of the tapes they asked over and over again, "how can we promote this behavior?" While initially we did not intend to engage in training teachers in how to promote desirable forms of behavior (we tended to see this as a natural outgrowth of the training) we saw that in order for the training to have any impact at all beyond the mere learning of a new set of labels, we would have to take this into consideration. This concern of the teachers, voiced over and over again, prodded us to consider including within the commentary on the tapes and in the accompanying manual, suggestions on how teachers can encourage the development of certain desired behaviors. An accompanying running commentary was written but it was decided in the meantime to leave this aspect fairly open and flexible until the final training sessions had been completed.

On the basis of our experience during these pilot training sessions, changes were made in the tapes and an accompanying running commentary was written. We felt that before preparing the final package of tapes it was wiser to wait and learn from interaction with the students what types of explanation, commentary, and elaboration would be most helpful in a <u>final</u> teachers manual.

The results of the pilot further confirmed our initial feelings about the factors derived from schedule B, i.e., even though we prepared tapes illustrating verbal expressiveness," and task orientation," we decided not to include these in our training curriculum. First, as already indicated, these were rather weak predictors of intelligence in our initial study. Secondly, it was much more difficult to transfer these aspects of behavior into clear, visual terms and, thirdly particularly in regard to "verbal expressiveness," the whole question of the significance of verbal behavior as a measure of intelligence is highly subtle and intricate . Certainly it involves questions of a highly theoretical nature relating to the meaning of language acquisition as an indicator of cognitive functioning. Since our objective was to focus on behavioral cues which are easy to identify, and since we found these aspects of behavior to be more highly associated with IQ among disadvantaged children, we thought it best to concentrate on only those factors that were most amenable to immediate translation into visual terms, i.e., those aspects of behavior derived from Schedule A. This did not mean that discussion on language would be foreclosed if it arose during a group discussion. However, for the reasons expressed above, we thought it best not to include this within the training package, per se.

VI. RESULTS

A. Analysis of Data: Replicated Design

As a means to replciating the earlier study, the following steps were taken in applying the previously determined regression equation to the current data.

First, raw factor scores were calculated, for each child, for each interaction period, for each of the original five factors represented in the factorial design of the observation schedule. That is, an autonomous initiating score, a passive responding score, a socially destructive score, a socially constructive score, and a non-purposive score was calculated for each child, during each interaction period.

As in the previous study, each of these scores was weighted according to the number of interactions taking place during each of the interaction periods in order to avoid the obvious bias reflective not of differences in behavior necessarily, but of differences in number of interactions. Each score was weighted, as follows: the average number of interactions per observation period was calculated, for the entire study population. This average was then divided by the number of interactions occuring during each subject observation period. Each factor score for each child was then multiplied by the resulting fraction, thus weighting the factor scores for the number of interactions observed.

The regression weights developed during the earlier project then were applied to these data, for each set of individual factor scores, according to the following formulae:

$$\text{Predicted IQ} = 3.873\,(\text{I}) + 1.013\,(\text{II}) + .737\,(\text{III}) + 15.889\,(\text{IV}) \\ 3.769\,(\text{V}) - 797.600$$

Application of this formula led to a correlation coefficient between actual and predicted IQ equal to .2481.

The correlation between predicted and actual intelligence scores is statistically significant, at the .05 level. Because of the relative weakness of this correlation, additional attempts were made to refine the relationship between predicted and actual IQ. The next step involved calculating the predicted scores on the basis of non-weighted factor scores. This correlation coefficient between actual and individual predicted IQ is equal to .0342.

As may be seen, the results are considerably poorer when using non-weighted scores, resulting in essentially no statistical relationship whatsoever.

As a final step in the replication analyses, the multiple regression formulas were computed for the current observational data, for both weighted and non-weighted data. The regression formulas are presented below for weighted and unweighted data, in that order.

IQ = .0601 (I) - .273 (II) - .4596 (III) + .5326 (IV)
- .3896 (V) + 91.1642

Multiple correlation coefficient = .330336

IQ = - .1497 (I) - .1845 (II) - .2733 (III) + .3290 (IV)
- .6874 (V) + 109.0714

Multiple correlation coefficient = .35692

Some possible explanations for these results:

First, in terms of statistical operation, it is to be expected that a shrinkage phenomenon is operative when developing a multiple correlation with other than the criterion groups particularly with as many as six variables involved, even if the assumed relationship were in fact operative: A Type II error, However the shrinkage phenomenon would not by definition, apply to the calculation of new regression weights and their application in the prediction of IQ. It can be stated, therefore, that prediction of IQ among this group of subjects, using previously developed factors, was not satisfactory as had previously been the case.

Second, of the four sources of error in measurement (occasions, item, subject, judges) it would seem that the situation promoted "occasion" and"subject"error, namely, the Day Care setting elicited a different set of expectations (and behavior) than did the Head Start setting and, second, Day Care children may be expected to differ from Head Start children. Even though the mean IQ of the East Tremont Day Care Center children was identical to the mean IQ of the East Tremont Head Start children previous studies have shown that there are qualitative differences among the poor. (See, Holmes 1968) and "Method of Procedure" section of this report). These differences do not necessarily show up in a numerical IQ score, however, they are manifested in other subtle forms of behavior and attitude. Perhaps the East Tremont Day Care Center children were similar in certain of their

outward behavioral manifestations to a middle class sample of children; hence, our observational schedule would not be as reliable a measure of behavioral cues in the context of predicting intelligence, i.e., a pure act as manifested by an extremely disadvantaged child does not have the same excess nuance and perhaps subtlety as the same act when manifested by a child from a more advantaged culutral background. This difference in populations may partially account for the fact that our original relationship did not hold. (It is appropriate to note again that, in the earlier study, relationships found among Head Start children were markedly different from those found among middle class children).

Despite the discouraging results of the replicated design, the results of the pilot led us to believe that the tapes could be of enormous value as a teaching device, irrespective of the statistical relationships obtained in application of our previously determined regression formula.

B. Perceptual Shift Training I (Spring 1970)

I. Sample:

Participants in the training were a group of fifteen student teachers at the Lehman College of the City University of New York. These were senior year students who were planning to become teachers the following fall. It was not possible to select a control group from among Lehman College students because the number of student teachers who were training for early childhood education was prohibitively small. A control group was selected, therefore, from New York Community College. The selection of a control group from outside the participating college was also a means of assuring against contamination of results via discussion among students. The control group consisted of second year students at New York Community College (the equivalent of college sophomores) who were also being trained as specialists in early childhood education. The groups were comparable in training and exposure in that second year community college students receive the equivalent exposure to live classroom situations as the Lehman seniors. The control groups of teachers from New York Community College were to provide a means of evaluating the impact of training.

II. Procedures:

a. Difficulty of developing a criterion measure:

If teachers could be trained to perceive children's behavior through a framework permitting accurate evaluation of their relative intellignece, the ultimate test of training impact

would be the accurate ranking of a group of children. The initial proposal called for the development of a videotape of representative behavior which would serve as a criterion measure. In the preparation of our training tapes, however, we discovered many practical difficulties preventing completion of a tape which could serve as an adequate criterion measure. First, technically, it was difficult to get all the children in view at one time where this was possible visually the individual utterances of children were lost. In essence, the criterion would have suffered from criterion insufficiency.

Editing to focus on a few children proved to be very time consuming, and we were fearful of introducing a bias by a too hasty selection . An alternative solution to the problem of developing an adequate criterion measure would have been to allow teachers to visit centers and observe children; however, it would have been equally clumsy to have approximately thirty teachers (experimental and control groups) visit a classroom to view children in a live setting, since their presence in the classroom, the time of the visit, etc., would have introduced immeasurable variations in their scores and ratings. This method would have introduced criterion contamination. Hence, to insure that all teachers were viewing the same children at the same time under the same circumstances, we decided to bring the children to the teachers.

An entire class of fifteen four year olds at East Tremont Head Start Center were tested and observed, then brought to Lehman College. The children played in a small groups laboratory provided for experiments of this nature, while they were observed through a one-way mirror for approximately one hour by experimental and control group subjects. Each child had a letter pinned to his shirt corresponding to a letter printed on a 3 x 5 card. There was a letter for each child in the classroom . Each subject was handed a stack of cards and asked to observe the children and then record their impression of the relative intelligence of each child by placing the corresponding cards in rank order. This task was obviously difficult since the participants did not know these children (1-1/2 hours is hardly enough time to get a sense of how a child functions, various children have "off days," etc.). Furthermore, it might be possible to see gross differences, but discriminations necessary to make fine distinctions among 15 children is probably impossible to do. In retrospect a simple dichotomy between high and low might have sufficed as a measure of perceived differences in cognitive functioning but we attempted to meet the requirements of the initial proposal which called for a rank order type of measure.

While the weaknesses of the criterion measure chosen are apparent, we felt that if various forms of behavior do correlate with, or are indicative of, varying degrees of intellectual functioning, it should be possible to make some kind of assessment when observing a group of children, Particularly, there should be some difference in assessments of those who had learned to guide their perceptions on the basis of a specific interpretive framework.

b. Implementation of Training Seminars (Spring 1970)

The pretest took place on March 19 and on April 9 the training sessions began. By this time, six tapes were completed,each illustrating one of the following aspects of behavior: social random or nonpurposive, autonomous, affective, task-oriented, and verbal expressiveness. Each session was one class period, 50 minutes, in duration. We found that this amount of time permitted only a viewing of the tapes with accompanying commentary and left little time for a discussion. Since we felt that the discussion played a major role in the training we questioned the probable impact and value of these exposures. Furthermore, most of the trainees were not planning to pursue careers in early childhood education, but were planning to teach in the lower grades in the public elementary schools in New York; hence they did not have a deep or even a pragmatic interest in pre-school education.

There were six scheduled sessions - four of the sessions were completed with full attendance, however, the last two took place during a period of students' strikes and on one occasion the instructor was not able to gain entry to the classroom, Finally, the project could not be completed since classes were suspended at the beginning of May, 1970 as a result of the Kent State massacre. This meant that in addition to not being able to complete the training sessions adequately, a post-test measure of training impact could not be administered either.

3. Results:

When we learned that we could not complete the project by the end of June as initially proposed, we requested an extension from the Office of Economic Opportunity,which was granted.

C. Perceptual Shift Training II (Summer/fall 1970)

I. Sample:

Training in the fall was implemented at New York Community College. Scheduling at Lehman College, and the fact that a very small minority of student teachers were actually planning to become preschool teachers, i.e., most of them would not be working in early childhood education programs, suggested that it would be more relevant and profitable to do the training at an institution which provided for training of early childhood education teachers and specialists. New York Community College was such an institution and we decided to continue our training program there.

Program participants consisted of second year students in early childhood education at New York Community College. The majority of these students will continue at four year colleges for bachelor's degree. A few of them will become teacher assistants in nursery school programs throughout the city. There were two classes specializing in early childhood education and arbitrarily one was chosen as the experimental group and the other as the control group. There were no differences between control and experimental groups in terms of age, background, work and academic experience or future goals.

b. Procedure:
Development of final criterion measures.

The summer months permitted us time to once again make some changes in the tapes, to film a number of additional sequences, and to perfect our criterion measure. We now had time to construct a criterion tape that could reasonably relate to what we had been taping for the past few months; we also had time to review the behavior of each child considered for inclusion in such a tape and to do the actual and appropriate editing. A criterion tape was constructed illustrating: goal-directed behavior , goal-less behavior, and affective behavior as manifested by children of varying intelligence levels. The children who exhibit "social behavior" most typically and frequently are also those who are functioning at the highest intellectual level as measured by the Stanford-Binet IQ Test. Those who exhibit goal-less behavior exclusively, are functioning at the lowest. The behavior and measured IQ are correlated. Those who demonstrate varying degrees of both, function at various ranges above and below normal IQ scores. Eight children are represented in various sequences, each lasting from three to four minutes. The children represented on

these are different from those represented on the training tapes. The criterion tape itself is approximately 50 minutes long.

Before the beginning of each sequence, the child represented is identified by a letter (from A to J) that have been randomly assigned. The model of the criterion tape is as follows:

Table 3: Model of the criterion Tape

Rank order of Intelligence	Code letter	Behavior Exhibited
Mark	D	Goal-directed behavior and social behavior
Annette	F	Social behavior
Gerard	A	Social behavior
Vivian	G	Social behavior
Dana	E	Goal-directed behavior and non-purposive behavior
Gary	H	Goal-directed behavior and non-purposive behavior
Jacqueline	C	Non-purposive behavior
David	B	Non-purposive behavior

As can be seen from the above, some children are shown exhibiting two very distinct types of behavior while others are shown exhibiting only one. However, each child is shown for approximately the same length of time. The order of presentation is randomized according to intelligence level, sex of child, and type of behavior. The order of presentation is as follows: F,H,C,D,B,G,E,A.

The tape was shown to both experimental and control subjects at the time of the first and the last training seminars thus serving as the pre- and post-criterion measure.

On each occasion the subjects were asked to rank the subjects shown on the tapes in order of intelligence. Once again, 3" x 5" cards were given to each participant with letters corresponding to those indentifying children on the criterion tape. They were asked to place these in rank order. They were permitted to view the tapes twice. The class periods at New York City Community College are two hours in length which permitted us greater flexibility in program scheduling. The children shown on the tapes ranged in IQ from 81 to 124, one child was in the "superior" range, one in the "high average" two were at the upper limits of the "average" range and two were in the "low average" range of standard scores. The actual scores were as follows: 124, 118, 109, 104, 98, 94, 88 and 81. We realize that the differences in actual intelligence as measured by IQ scores as well as differences in actual behavior between contiguous children are not significant; however, the span of intelligence as well as the behavior over the entire spectrum of the eight children selected was considerable,and subtle gradations could be seen by a trained observer. We are aware that these fine discriminations are not subject to any form of valid measurement. Once again it is important to reiterate the difficulty of translating what initially was a numerical relationship,i.e., weighted frequencies of various combinations of behavior related to measures of intelligence, into meaningful perceptual terms. The imprecision and often impressionistic nature of this translation is acknowledged by the investigators in this project; however, the technique and intent of the program justified the attempt.

3. Perceptual Shift Training Seminars (Fall 1970)

The training consisted of three 1-1/2 hour seminars. In each session, the tapes were shown twice and discussed. Since many of the students were currently working as aides in nursery school programs they were able to bring their practical experience to bear on these discussions centering around the tapes. Some of the techniques that we found so useful in our pilot study were utilized once again,i.e., group process, relating practical experience to actual tapes, relating of videotape curriculum to early childhood development curriculum in the academic program. This broader use of the videotapes was a necessary ingredient for the total successful implementation of the program. The disadvantages of most previous audio-visual training programs have been their encouragement of passivity. That is, teachers sit and absorb material with little encouragement to relate it to their actual experiences or to other aspects of their education. While we wanted to emphasize the importance of carefully looking and listening to children, we also wanted

to emphasize the importance of action and participation on the part of the teacher. One way of doing this was to encourage action and participation in the actual training process itself. This involves more than toleration of initial resistance and suspiciousness. It necessitated encouraging teachers to voice their attitudes which opened the way to more productive learning and created a model of what active teaching and learning could entail.

The seminars were run as follows: after an initial introduction to the topic to be shown on a particular day, the tape was shown once with appropriate comments. The tape might be stopped at certain sections to emphasize certain points. After the initial viewing was completed, discussion would ensue on the meaning of behavior exhibited, whether any of the students had encountered any of this behavior in their actual experiences, how it could be interpreted, and various ways with which this behavior could be dealt. At the end of the discussion, the tape would be shown again with salient points in the discussion highlighted once more. Often the students would stay after the second viewing for further discussion.

At the final session, many of the students commented on what a valuable experience this had been for them: they were able to recognize patterns that they had often witnessed in their own classrooms, they had been given an opportunity to discuss techniques for approaching various problems and they had experienced the process of how a teacher goes about formulating educational goals for her children.

4. Statistical analysis of program impact

The statistical analysis of program impact focused upon a comparison of the level of agreement between actual and perceived IQ, among both experimental subjects and control subjects, pre-program and post-program. We followed two procedures: the first step in these analyses was the calculation of Spearman rank order correlation coefficients (Rho's) for each subject, relating the actual ranking IQ of observed children to each teacher's ranking of IQ. These Rho correlations are presented below in Table 4.

Table 4. Rank order correlating coefficients, among all subjects for Time I and II

TIME I		TIME II	
Exp.	Cont.	Exp.	Cont.
.90	.71	.88	.83
.71	.62	.76	.02
.79	.95	.95	.60
.62	.81	.76	.50
.57	.43	.64	.76
.52	.86	.86	.88
.81	.79	.79	.48
.90	.81	.86	.90
.05	.62	1.00	
.83	.90	.33	
	.76	.76	
	.80	.95	
		.88	

Following this, Z scores were computed for each of the correlations, according to the following formula:

$$Z = 1/2 \log_e \frac{(1 + R\,12}{2 - R\,12)}$$

$$20$$

An average Z score was then calculated for each of the groups, i.e., experimental and control, Time I and Time II. Comparisons then were made among the average Z scores by dividing the difference of pairs of Z scores by the standard error of Z given by the following formula: Standard error of Z =

$$\frac{1}{N\,1-3} + \frac{1}{N\,2-3}$$

The results of these analyses are shown below in Table 5.

Table 5 Average Z scores from Rho correlation coefficient for each group.

	Exp.	Control
Time I	.8379 (r=.69)	1.0679 (r=.79)
Time II	1.2931 (r=.86)	.8522 (r=.69)

These Z scores were used in testing the differences between correlations; none of the differences between average scores reached an acceptable level of significance. However, since all of the results were in the predicted direction (the control group becoming worse,over time) and in view particularly of the extremely small study N, the results were highly suggestive. Further analysis yielded the results that given the same magnitude of difference an N of 40 would have yielded an acceptable level of statistical significance. A calculation of the confidence limits, as shown in the table below:

Table 6: Confidence limits for the correlation coefficient expressed in Table 5.

Time I		Time II	
Exp.	.27 to .89	Exp.	.39 to .97
Cont'l	.39 to .94	Cont'l	.02 to .94

shows that the particular statistical measure of success we were using was not appropriate for indicating results. That is, a logical" unreasonable" shift in average scores would have been necessary in order to achieve an acceptable level of statistical significance. This led us to try the following procedure which we considered to be a more appropriate measure: the children on the criterion tape were dichotomized into high and low IQ scores with four high and four low. Then the number of times that a high ranking child was placed in the low category and the number of times a low ranking child was placed in the high category (errors in assessment) were counted for each subject on both pre- and post-measures and for both experimental and control groups. A Chi-square test of association was computed for the experimental and control groups yielding the following results:

Table 7: Analysis of correct and incorrect responses,among experimental groups.

	Incorrect	Correct	Total
Pre	24 (18.33)	64 (69.66)	88
Post	16 (21.66)	88 (82.32)	104
	40	152	192

$X^2 = 4.0999$
$P < .05$ for 1 df

Table 8: Analysis of correct and incorrect responses among control group.

	Incorrect	Correct	Total
Pre	12 (12.4)	84 (83.6)	96
Post	10 (9.6)	54 (54.4)	64
	22	198	170

$X^2 < 1$ for 1 df
NS

As can be seen from an inspection of the above tables, the experimental group improved in the judgement and assessment of children's relative intelligence to a degree beyond that which would be expected on the basis of pure chance while the control group showed no such improvement.

Some other aspects of the results warrant discussion. For example, it is quite obvious that the control group did more poorly the second time while the experimental group improved. A possible explanation for this result is that the post test was held during final exam week and the control group was in a highly anxious state. Though the same was true for the experimental group, they had a much higher investment in doing well on the post measure,in addition to the fact that they had received training in how to identify cues and assess their relative importance. The control group,however, in addition to not having received the training did not have the same investment and undoubtedly had other things on their minds such as final examinations. What is important to remember ,however, is the fact that without training the control group did much more poorly upon retesting while the experimental group under similar conditions of external pressure were able to utilize the training they had received and exhibit this upon retesting.

VII.Discussions and implications:

Though the scope and intent of the videotape curriculum package presented here (see Appendix A for Manual) was partially limited by the study from which it grew, we found that both the technique employed and the substance and quality of the tapes had value beyond their initial intent or scope.

What seems to be of extreme importance in our study, and this has no numerical or statistical correlate, was the quality of discussion generated by the tapes and the comments of students at the end of the training session. One student, for example, was able to see how formerly she had been overprotective of her children and was afraid to intervene and tamper with the purity of their own personalities. She realized how her attitude could limit a child's development. Others learned to distinguish between pseudo-autonomy, and true autonomy they could see that children who exhibit pseudo-autonomy cannot utilize a teacher as a source of support whereas the truly autonomous child knows how to employ the teacher as a resource. Many developed a greater sense of their responsibility in offering stimulation to students. This led many to see how they needed more training in acquiring the skills necessary to help children grow cognitively; to most it meant changing their self-image from one of passive baby sitter to one of active educator. Hopefully some of the teachers were able to see how they were projecting some of their own desires for frivolity and play onto the children and thereby denying children an education.

Unfortunately, the degree to which we encountered the ideology of "childhood as a time for fun and games," and a lack of recognition of its importance for the development of building blocks for future skills was rather astonishing. The value of this particular curriculum and the recommendation within the manual for its use can offer a good starting point for modifying this ideology into a way of thinking which sees education as an exciting and active process for both the teacher and the child.

On a purely procedural level, demonstrating and illustrating behaviors through the use of visual medium seems to be an excellent teaching technique. If we are to teach teachers to re-orient their perceptions, the easiest way is not to tell them what to look for, but to show them what to look for. Furthermore the learning techniques of repetition and corrective feedback can readily be employed via the use of videotapes, and sequences can be played and replayed numerous times, thereby facilitating review and acquisition of an idea or concept.

To summarize, the strength of our tapes are as follows: 1) they show actual spontaneous ongoing behavior as it routinely occurs in a normal classroom setting offering the teacher the opportunity to see what is most familiar to her; 2) accompanying comments clarify the behavior portrayed and interpret it with an emphasis on the child's cognitive needs; 3) they are orginized around certain behavioral cues which can be received frequently for instructional purposes; 4) they are adaptable to a wide range of educational approaches and 5) a written manual reviews

each tape sequence and suggests ways in which tapes can be used in curriculum planning.

Blum revolutionized early childhood education in 1964 by publishing his statistical study indicating that over 50% of a child's intellectual growth occured before the age of 4. This plus the work of Deutsch at the Institute of Developmental Studies, the work of Betty Caldwell, and others, helped to spur the drive for expansion of early childhood education in this country and moved it out of the "fun and games" realm, into more serious pursuits. Unfortunately this approach has not filtered down into many of our institutions of teacher training. The resistance to learning,as well as to viewing learning as a source of enormous stimulation and reward is still very great. This coupled with a fear that encouraging cognitive development in some way may hinder the child's natural spontaneous emotional development is still quite strong.

Some educators have said that the attitude of the teacher might be the single most important ingredient in any education program (Swift, 1964). Unfortunately from both the researcher's point of view as well as that of other's, teachers tend to carry with them attitudes and ideologies about child development that can be disadvantageous to children's cognitive growth. For example, a simplistic emphasis on children's emotional development has meant to many a preclusion of emphasis upon intellectual growth. It has been shown over and over again that children from disadvantaged backgrounds enter public school with severe deficits in intellectual attainments, attainments that are required for success in that school system. If resistance to the recognition of children's deficits (as well as strengths) exists ,and if it is, in some instances, fostered by our institutions of teacher training ,the results can be disastrous for pupils.

A further interesting sidelight is that while teachers claim to ignore children's relative intellectual capacities, they nevertheless assess children in these terms and, as our previous research has shown, their assessments tend to be haphazard and inaccurate. For these reasons we feel that the videotape curriculum has enormous significance and potential. The techniques employed can point the way toward a new approach to teacher training, especially for early childhood teachers of the culturally disadvantaged. It is hoped that now that pilot tapes have been prepared on a demonstration basis, it will be possible to test them on a wider scale and to further develop them as a means to assessing their potential for general and broader implementation.

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A P P E N D I X

Manual:

PERCEPTUAL SHIFT TRAINING FOR TEACHERS OF DISADVANTAGED CHILDREN

PERCEPTUAL SHIFT TRAINING MANUAL

INTRODUCTION

The need for teachers to address themselves to each child at his particular level of ability and comprehension has been an accepted tenet among educators. A prerequisite to this, however, is the teacher's ability to accurately assess the level of the child, particularly in the critical area of intelligence. Teachers do evaluate children, but often respond to factors that are not relevant to the areas being assessed. For example, many teachers of disadvantaged children see passive conformity to classroom routine as highly associated with intelligence. The danger of inaccurately perceiving behavior is that a child's weakness will not be identified and dealt with, nor his strengths developed. As the most important variable in an effective nursery program, the teacher must look for the appropriate clues in order to identify and develop the intellectual and social potential of her pupils.

Observers have pointed out that if children grow up in extreme slum conditions with no consistent care, routine, or order in the home, they have a disregard for, or unawareness of, structures of group behavior and play. They may lack curiosity or interest in the environment, do not know how to use the material available, and may be vague about themselves as well. If a child is exposed to inconsistent nurturing in a disorganized environment, he will suffer from an inability to discover explanatory statements about life. Alternatives are not offered to the child; hence, he does not develop an ability to see alternative ways of carrying out instructions. His world is haphazard and constricted, and his thinking ability to move in the world become likewise.

Recent evidence strongly suggests that it is the interaction between mother and child that most significantly effects conceptual development. In infancy it is her availability as a stimulus object and later her style interlocutor that are important. Styles of maternal care are associated not only with cognitive functioning but also with various motivational deficiences, as well as tendencies toward an implusive unplanned approach to cognitive tasks.

It is obvious how difficult the task of the teacher becomes: the teacher must create an environment in which a large group of children can learn; she must be an effective mediator of the environment for each child, and make up for the deficits in development the children may exhibit. It is important to remember, however, that even among the "disadvantaged," differences in cognitive and personality

characteristics are evident; while there may be overall patterns of behavior associated with impoverishment, there are also differences in competence, skills, and abilities. For the teacher to be effective she must know where a child is in terms of both these general and specific characteristics.

The objective of the videotapes is to emphasize the importance of learning to observe and interpret children's behavior in order that they may be guided on to greater achievement. We are familiar with the "tuning out" process, in which a child appears to be conforming to expectancies of classroom routine and yet no learning takes place. Many children spend most of their school years this way, the process beginning at the pre-school level. If guided by informed perceptions, the pre-school educator can more effectively deploy the resources at her disposal and direct her efforts where most needed to encourage the acquisition of skills.

The skills we are focusing on in these videotapes are cognitive: reasoning, judgment, thinking. There is no attempt to diagnose the emotional content of the behavior. The focus is on its intellectual implications; the objective is not therapeutic but educational.

The tapes emphasize two processes the educator must always keep in mind:

1. Accurate observation - the importance of scanning and listening from afar.

2. Productive interpretation - the importance of assessing before leaping into a situation.

Finally, while observation and restraint are necessary on the part of adults in contact with children, we believe that teachers must take an active role. Through suggestion, comments, demonstration, and other relevant means, they can foster intellectual and social development; however, it is essential to begin with an informed assessment of each child's demonstrated behavior.

Autonomous Behavior

The transition from childhood to healthy adulthood requires acquisition of the capacity for self-initiation or autonomous behavior. Bruno Bettelheim has stressed how important it is from birth on that the child get responses from the environment

which encouraged his spontaneous move toward the world. For example, the infant moves from sensory and reflex control towards organization of reflexes and self control. According to Piaget, imagery, object constancy and means-ends relationships are achievements of the sensory motor stage; these in turn are the precursors for more sophisticated cognitive behavior, or self-directed and sustained purposeful activity. At the age of four, children should be exhibiting such behavior. While autonomous behavior is a complex activity with multiple manifestations, what is most central to it is its directedness. The sequences illustrating autonomous behavior emphasize this by focusing on three aspects of an action: (2) whether there is a definite goal in mind - is it purposive? (3) whether he terminates it himself.

Table: Autonomous Behavior (Total Length - 20 minutes)

SEQUENCE	WHAT IS HAPPENING	MANIFESTATIONS OF AUTONOMY
INTRODUCTION		
1	Girl cutting and pasting	Purposive manipulation
2	Boy sorting material with magnets	Persistence, attention, investigation
3	Girl pasting crown	Persistence, purposive manipulation, attention
4	Boy placing objects in peg board	Purposive manipulation, attention
COMMENTARY		
5	Girl painting	Imitation, purposive manipulation
6	Girl constructing with sticks	Persistence, purposive manipulation
7	Boy building with blocks	Reflectivity, investigation, persistence

As you can see in the first sequence, a little girl is cutting and pasting. As is apparent from the activity, she has a definite goal in mind. The next few sequences illustrate this same type of behavior - goal oriented. The little boy who is sorting the materials in the second sequence is distinguishing between items which adhere to the magnet and those which don't; he is learning how to classify metals in terms of a property they share. The little girl in the fifth sequence wants to paint; you can see that she is able to complete successfully the array of acts preparatory to the pursuit of her goal (including the request of teacher's permission).

The activities selected for the videotapes vary in degree of complexity and types of skills required. For example, the little girl "pasting a crown" is pursuing a constructive goal, which requires a different range of skills from those displayed in the block building sequence.

What all these scenes commonly demonstrate is the importance of skills to the child, i.e., the possession of the means through which he can purposefully manipulate his environment, instead of being manipulated by it. It is important that the child neither be ignored nor overwhelmed.

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Where no purposive behavior is apparent, teacher and child can develop it together; for example, a structured activity sometimes contains within it all the components of autonomous behavior, and hence gives the child an experience of initiating and terminating a purposeful action. For those children who do not exhibit this behavior spontaneously, a teacher can make things available to enable completion of a goal. When this is accomplished, new material can be offered to encourage further focusing of attention and exploration. As you can see, each child in the foregoing sequences was able to establish his own boundaries within the range of stimuli surrounding him - this kind of process is important for growth.

The three and four year old child is beginning to deal with a world full of new problems and is learning to cope with new challenges. In order to deal effectively with his world, he must strive for a balance in which his actions are not completely determined by internal impulses nor external constraints. A skilled child is one who

has learned to make events intelligible; this capacity is fostered by an ordered and predictable environment. He can use his skills or comprehension to guide his actions purposefully and effectively. This competence and autonomy can be fostered by the teacher's individualized response to the child and her encouragement of alternative ways of carrying out instructions.

The next tape illustrates goal-less behavior, the reverse of autonomous functioning; it is something we see too often in classrooms.

Goal-less Behavior:

The first sequence is long and deliberately so in order to impart a sense of how a child like this spends most of his time in a classroom. He is literally making no contact with anyone or anything; the utterances he makes are merely simple, repetitious ones. There is no evidence that this child senses himself as central to the ordering of his own world - that is, as being able to control his own behavior. He is, not surprisingly, a child whose IQ is "below normal." You will notice there is little effort on behalf of any of the adults seen in the background to establish communication with him, or to reinforce his behavior when there is indication of a positive response, or most importantly, to establish any structure to guide him into and through the completion of an activity.

Observe this child for clues as to what he can do. Obviously, he is not the kind of child you can sit down and instruct to do a puzzle, but, what are his possible interests, his skills?

Table: Goal - less Behavior (Total Length - 8 minutes)

SEQUENCE	WHAT IS HAPPENING
INTRODUCTION	
Child 1	Boy wandering, mumbling, having haphazard contact with others
COMMENTARY	
Child 2	Girl pounding on a toy cash register

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Here are some things to look for:

1. The boy is verbalizing - use it, try to build a conversation through it.

2. He is motoric, active. With this type of child, perhaps concepts can be built through movement. Movement has the abstract properties of language, and can extend meaning and contribute to mastery of environment. For a child at this stage of development with these proclivities, this might prove to be the best approach.

Similarly, for the girl at the cash register, some areas to focus on might include the following:

1. Recognition of various sounds (keys, bells).

2. Awareness of function of a register -
   a. the initiation of dramatic play around a register
   b. introduction of toy money and counting.

3. Cause and effect relationship - i.e., the banging of keys and appearance of numbers.

4. Manipulation and refinement of digital movements so that they become purposive.

5. Classification - similarity and/or differences between registers and typewriters, pianos, etc.

The emphasis would be on moving the play from a purely functional level involving simple muscular activity, to a more creative level in which the sensory data received is transformed and guided by abstract mental images, i.e., intelligence.

Affective Behavior

A child who shows affective behavior is one who is "tune in" with his environment: he is able to receive stimulation from it.

As with the sequences you have already seen behavior illustrated here can be used for cues as to what a child is interested in. In this case, a positive response indicates involvement and interest.

The child in the first sequence obviously is very responsive to music; the child in the second is able to derive and to exhibit pleasure over her own accomplishments. The last sequence is quite instructive, watch the animation and exhuberance. Do not be afraid of active or animated behavior when it is part of a general positive and happy responsiveness.

Table: Affective Behavior (Total Length - 15 minutes)

SEQUENCE	WHAT IS HAPPENING
INTRODUCTION	
1	Boy clapping hands, smiling, jumping, exhuberant
2	Girl cutting clay with enthusiasm and conceptual involvement,
3	Boy showing numbers to a girl, pleased with what is transpiring.
4	Two children dancing and laughing, counting happily while jointly swinging arms.
5	Two boys playing with blocks eager and enthusiastic
6	Boy conversing with playmates with obvious involvement and eagerness.
7	Boy playing with zest and enthusiasm.

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Once again it is important to watch each child in terms of what he talks about, what he pursues, what he reacts to, and what pleases him.

Social Constructive

While these sequences are the most difficult to describe, their quality is readily apparent when you observe. In each, a child is involved in an interaction; in each an idea is shared and elaborated in cooperation with at least one other child. There is a shared framework with some verbal communication related to what they are doing.

In looking at these sequences, it is important to remember that we are making no judgements about personalities, nor are we interested in analyzing content - we are focusing on the process of social interaction.

Looking at the first sequence we see that a genuine conversation, and exchange of information of some kind, is occurring. Each child is reporting on his observations.

Notice the monitoring and labeling of intentions, motives, anf feelings which enables the child to gain clarity. Language is being used
to appropriately classify information.
Notice the monitoring that is taking
place on the individual level (indicated
by the pause between assertions), and
on a shared basis, indicating the degree
of involvement in the interchange.

Information is also being used to joke
and tease. Each is relying on shared
information rather than physical
prodding to evoke a response from the
other.

In the second sequence, the boy is describing his actions to his playmate, showing a sense of himself and an awareness of what he is doing and what he intends to do by sharing this information with her.

In the third sequence, the children are teaching each other, imparting information. There is a genuine social exchange - one is asking for help in solving a problem, the other shows him how to do it. This child who is asking is also able to generate interest from the other. They are then both able to stimulate each other's interest in the task.

The fourth sequence illustrates this same type of cooperation - here the two boys are jointly working toward a goal, plus holding a genuine freindly conversation.

The little girl in the fifth sequence is quite adept at using language and play to manipulate a situation to her advantage. With her "dinner is not ready" remark, she is able to send the boys off in the context of the game in order to give herself the opportunity to play with the clay alone. This is quite a sophisticated display of social behavior: she is aware of her goal, and not only can she communicate this but also she can constructively manipulate her environment to achieve it.

The sixth sequence between the boy and firl illustrates a type of imitative social behavior (role of mother or teacher), in contrast to the previous little girl who used role-playing creatively for her own ends. Although imitative behavior is more ritualized, it involves language skills used appropriately. The boy's waiting for her response shows that genuine interaction is occurring: also, the attempt to communicate enjoyment is evident, as well as the use of affect to engage the little girl in the interaction. This type of behavior did not come from pure observation but from parent and child interacting in activities. Again this stresses the importance of guidance, explanation, and meaningful adult interaction with children.

This last sequence shows an array of children engaged in social interaction and an effort to organize an activity. There is a rudimentary attempt to construct rules, and assigning of "turns", an offering of help, responses to offers of help, and genuine conversation.

Summary Tape:

This tape illustrates autonomous, goal-less, social constructive behavior (and some affective behavior whereever it spontaneously occurs in the appropriate situation) as manifested by children of varying intelligence levels. The

children who exhibit social constructive behavior most typically and frequently are also those who are functioning at the highest intellectual level. Those who exhibit random behavior exclusively are functioning at the lowest. The behavior and the measured IQ are correlated. Those who demonstrate varying degrees of both, function at various ranges above and below normal. Observe behavior carefully for clues as to how the child is functioning - his skills and interests, what he responds to, his sense of mastery of self and environment.

TABLE: SUMMARY TAPE (Total length - 25 minutes)

SEQUENCE	WHAT IS HAPPENING
1 - Social	Little girl playing with play dough - Notice - how she comments on relative quantities they receive - how she carries the conversation - she initiates, provokes comments and responses from the others.
2 - Non-purposive	Little boy sitting - non-purposive handling a large block - his one remark is (presumably a goal) barely executed - there is no attempt to follow it through or even to see if the child he is addressing hears him.
3 - Goal directed	The boy is drawing a picture - he initiates the action and appears to have a definite goal in mind - he is drawing a face - unhappily this behavior may have been repeated ritualistically many times - hence little effort, imagination, thought or experimentation occurs - in such cases an alert teacher would introduce new concepts, new materials, new models to the child - in this instance - the child is exhibiting self regulating behavior - notice he knows when he has finished and terminates the activity - there is a marked contrast to the diffuseness of non-purposive behavior - a good example of which is seen in the next sequence.

4 - Non-purposive	The little girl is unable to successfully initiate an interaction - or to execute a goal - her resources for making contact with her environment or for mobilizing herself in directed fashion are limited - hence she is unable to benefit from anything happening around her.
5 - Social	The boy is enthusiastically engaged in a social exchange with the other boys - they are waiting for their juice - a good time for conversation to take place - he so obviously craves a responsive sharing of his enthusiasm which he is trying to communicate to his friends; appreciation for his story telling would be encouraging and rewarding; his alertness and engagement with his environment are so apparent - notice the way he catches the dripping juice.
6 - Goal directed	The boy is constructing a collage he actively makes use of the material around him - he directs his activities.
7 - Social	Two girls are painting and carrying on a conversation - their behavior is purposeful - they are sharing the colors and space and interpreting their actions to themselves and each other.
8 - Non-purposive	The girl is not engaged - notice, in contrast, the situation with the boy and the teacher.
9 - Goal-directed	In this sequence the same girl is involved in purposeful activity - she has directed her energies and organized her activities.
10 - Social	The boy is playing with play dough -

- like the girl in the first sequence - he is trying to prod the other children into interaction with him by means of conversation but with little success - he even turns to someone outside his little circle - his hunger for interaction and verbal interchange is apparent.